Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Medicina Clínica xxx (xxxx) xxx–xxx

MEDICINA CLINICA

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Scientific letter

Olfactory dysfunctions 6 months after a SARS-CoV-2 infection☆

Alteraciones en el olfato tras 6 meses de la infección por SARS-CoV-2

Dear Editor:

The medical sequelae of the 2019 coronavirus disease (COVID-19) have been described in multiple studies.[1]

These include some neurological symptoms, such as an altered sense of smell,[2] which is reported by up to 50% of patients with this disease.[1] In most patients, this symptom usually resolves two to four weeks after the infection,[3] but this is not always the case and it may persist over time, having a significant impact on the patient's long-term quality of life.

In a cross-sectional study including 86 patients with hyposmia following a mild case of COVID-19 and not requiring hospitalization, 58 (67.44%) reported a subjective olfactory disturbance for over 6 months after recovering from the infection (mean of 389.50 days with hyposmia; standard deviation [SD] 117.33).

The characteristics of this population are outlined in Table 1 below.

We conducted a clinical interview to collect variables such as the existence of parosmia (altered sense of smell), olfactory distortions in relation to food, presence of phantosmias (olfactory hallucinations), and symptoms related to brain fog. In addition, we performed a neurological physical examination and used Sniffin' Sticks Olfactory Test,[4] designed and validated to objectively assess olfactory capacity, consisting in presenting a patient with 16 sticks with odors that they must attempt to identify among four possible options.

The hyposmia pattern described by most patients is striking, since, although it tends to reach its maximum degree within the first few days following the initial infection, most patients report an improvement after the second or third week, albeit with subsequent worsening that persists over the following months.

Of the 58 patients suffering from subjective hyposmia for over six months, 43 had an objective pathological test, with the apple-scented stick being that linked to the highest rate of error, with approximately 77.6% of patients failing to recognize the smell.

Most of the participants (more than 75%) reported having parosmias, mostly with unpleasant odors (cacosmias) in relation to food, this being a symptom that has previously also been described in other studies.[5] It is noteworthy that, during the clinical interviews, many of these patients linked the parosmias to odors to which they had been exposed very frequently prior to developing COVID-19.

Table 1
Population characteristics.

Age, mean (SD)	38.5 years (9.1)	
Sex, n (%)	Male	8 (13.8)
	Female	50 (86.2)
Smoking habit, n (%)	No	33 (56.9)
	Yes	7 (12.1)
	Ex-smoker >6 months	18 (31.0)
Personal neurological history, n (%)	No	39 (67.2)
	Headache	15 (25.9)
	Tremor	1 (1.7)
	Epilepsy	1 (1.7)
	Dizziness	1 (1.7)
	Sleep disorders	1 (1.7)
Presence of allergy, n (%)		24 (41)

To conclude, it should be noted that, although hyposmia is more common within the first weeks of a case of COVID-19 and in certain variants, the percentage of patients in whom this alteration persists in the long-term is not negligible.

It is important to highlight the probable functional limitation and emotional impact that olfactory disturbances persisting for over 6 months after a case of COVID-19 could have on a person. This symptom, together with others already described in persistent COVID-19, such as brain fog, which are initially relegated to a secondary role during the acute infection, can interfere in a person's daily life and persist in the long-term, with the consequent detriment to their quality of life.

It would be interesting to propose new studies aimed at determining the longer-term evolution of this type of clinical manifestations, as well as to clarify the pathophysiology of these symptoms.

Funding

This study received no funding from any source.

Conflicts of interest

The authors of this paper declare no conflicts of interest in relation to this study.

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☆ Please cite this article as: Quintana-Castro P, Garcia-Melendez DD, Morales-Casado MI. Alteraciones en el olfato tras 6 meses de la infección por SARS-CoV-2. Med Clin (Barc). 2022. https://doi.org/10.1016/j.medcli.2022.02.024

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